

IR4PS3 Rev 2 and Rev 3

July 5, 2008

This document describes how to use 'IR4PS3' to seamlessly reproduces the original 'Sony BD Remote for PS3' behavior with a 'Universal Infra-Red (IR) Remote'.

*Don't forget to do: "Registering the BD remote control with the PS3 system" before using IR4PS3, see **IR4PS3 Setup** section. Be sure to use a recent software version of the Sony PLAYSTATION®3. IR4PS3 was tested with version 2.1 and above (this include the new 2.4).*

Features:

- Compatible with various Sony IR code set: PS2 / PS3 / Common Sony DVD Player such as DVP-NS36, DVD Recorder such as RDR-GX355, Blu-Ray player such as BDP-S1, BDP-S300, BDP-S500, and unique custom code set. All code sets are accepted by default. But some refinements are possible to exclude devices to prevent conflict, see **Advance IR4PS3 Setup**.
- Multiple pairs of PS3/'IR4PS3' can be used in the same room if each 'IR4PS3' uses a distinct code set. This means also that it can coexist in the same room with other Sony DVD products.
- One button registration, using 'Setup' key, see **IR4PS3 Setup**.
- All advance initial settings can be done in one pass, see **Advance IR4PS3 Setup**.
- 'IR4PS3' logic properly rejects unsupported IR streams and use internal watchdogs to prevent deadlock.
- The IR receiver is highly sensitive, so a strait line of sight is not required; 160° horizontal and 140° vertical at 10 meters (tested with Harmony 880).
- Don't interfere with game controller because it doesn't use any USB port.
- Settings are stored in non-volatile memory.
- Not field upgradeable.
- Cannot transmit IR stream and cannot learn a specific IR code.
- Logitech database support.
- Available HEX/CCF/NVO for Philips, URC, Nevo, ...

If PS3 is OFF:

- ‘PowerON’: Power on the PS3.
- Other keys: No effect. However, with a specific setup control (see **Advance IR4PS3 Setup**) it is possible to power on with any keys (like the original ‘Sony BD Remote for PS3’).

If PS3 is ON:

- ‘PowerON’ or ‘PowerToggle’: A short press displays the power level or contextual console menu. This feature emulates the PS button.
- ‘PowerON’ or ‘PowerToggle’: Holding down button will eventually popup the shutdown menu. If you release the button as the shutdown menu appears, you’ll have manual control of the shutdown. This feature emulates the PS button.
- ‘PowerON’ or ‘PowerToggle’: Pressing button for at least 3 seconds will trigger the automatic shutdown when the button is released. This will in fact execute the ‘PowerOFF’ code.
- ‘PowerOFF’: Power off the PS3. Will work at any level of the PS3 operation (XBM, CD, Movie & PS3 Game) and will automatically performs the multiple steps required to shutdown a PS3. In fact, this triggers an internal sequence in the ‘IR4PS3’ logic that will execute all the steps. No need for a macro on the ‘Universal IR Remote’. Transmitting the ‘PowerOFF’ code can be as short as 100 mSec. See **Advance IR4PS3 Setup** for options.

External Power Supply:

An external 3V to 9V DC power supply is necessary (**sold separately**). A 500 mA power supply is not required, 100 mA is also fine. If you have erratic behavior with a TRUE 3V supply we suggest using one equal or above 4.5V. Possible choice for this power supply:

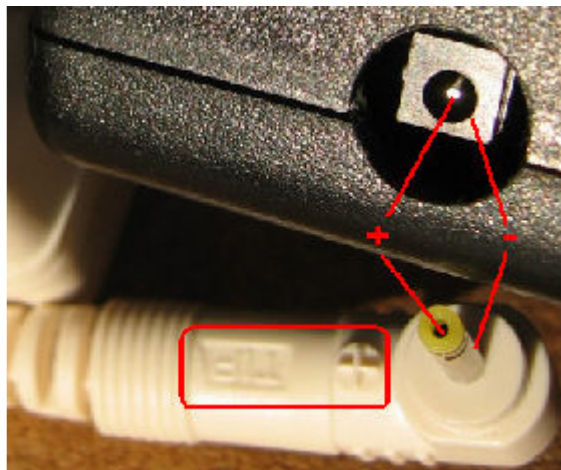
- www.thesourcecc.com, Catalog Number: 2731755. This one output more than 3V even if specified at 3V.
- www.radioshack.com, Catalog Number: 273-025. The following site <http://support.radioshack.com/support_tutorials/batteries/pwr-acdc-ref.htm> is a good list of available Radio Shack power supply.
- www.bestbuy.com, Model: JEN300 SKU: 7152813. Includes many plugs. Set this one to 4.5V for proper operation.
- Most discount/overstock electronic stores do have similar universal power supply and often at very low price.

The external power jack is an adapter plug type A. O.D.: 2.35mm. I.D.: 0.7mm. This plug is very common. It is also included in universal power supply kit that comes with multiple plugs.

- www.thesourcecc.com, Catalog Number: 2731704
- www.radioshack.com, Catalog Number: 273-1704

The external Power supply + external jack on the 'IR4PS3':

- The external body of the jack is the 'Ground / negative / -' input. The center pin is the 'VCC / Positive / +' input.
- Ensure proper external power supply input polarity for proper operation.



External Power Supply via mini-USB (Rev 3 only):

Rev 3 of the IR4PS3 now offers external power supply via a mini-USB cable. The source can be:

- Set-Top box
- Cable box
- Dish box
- USB hub
- USB power supply



Note that the PS3 **can't** be used as the USB power supply because PS3 USBs are off when PS3 is off.

Back cover must be removed to allow insertion of the mini-USB male connector.

Mini-USB cable is not supplied with IR4PS3.

WARNING: Never connect at the same time the mini-USB cable and the standard external jack power in.

IR4PS3 module integration with Sony BD remote module:

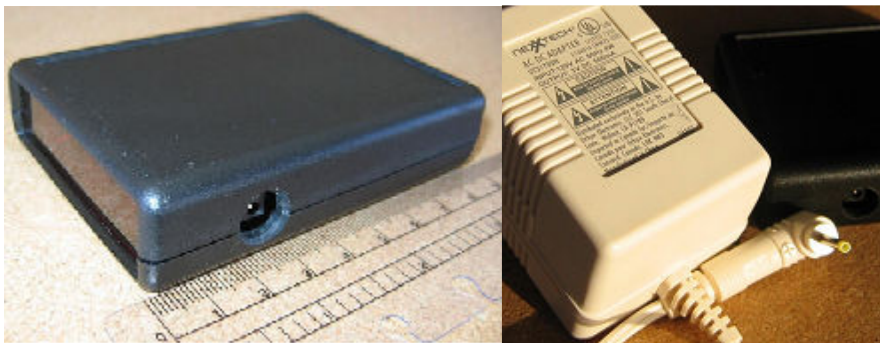
If you already own a Sony BD remote you may extract the Sony BD Logic from your original remote.

The following video shows how to proceed:

<http://www.youtube.com/watch?v=wgfJAKEhZy4> or search IR4PS3 in www.youtube.com

Important, this is a solder less integration.

The integration method is the same for Rev 2 and Rev 3.



Rev 2 IR4PS3 module shown above.

Preparation before doing the 'IR4PS3' setup:

You must first add 'IR4PS3' device to your 'Universal IR Remote'. Don't forget to customize buttons to your wish.

For Logitech Harmony remotes:

Device Setup

➔ From the list, add each device you want to control.

Device	Manufacturer	Model
Game Console (With DVD) ▼	IR4PS3 ▼	IR4PS3

Alternative devices are: DVP-NS36, RDR-GX355, BDP-S300.

Default Logitech activity options setting for 'Watch DVD or Laserdisc' activity ('Game / DVD') is inappropriate for proper shutdown in all situations. Do the following to correct this:

Activities → 'Game / DVD' → Settings → Change Options → Stop On Exit → Don't send stop command

Change Game / DVD Options

➔ Customize options for how your remote control works.

These options affect the general behavior of your remote.

Option	Setting	Description
Play on Enter	<input type="radio"/> Send Play <input checked="" type="radio"/> Do not Send Play	Controls whether or not to send a 'Play' command whenever you start the Activity.
Stop On Exit	<input type="radio"/> Send stop command <input checked="" type="radio"/> Don't send stop command	Controls whether or not to send a stop command to the device whenever you finish the Activity.

For Philips Pronto / URC / Nevo:



Download Daniel Tonk's CCF at <<http://remotecentral.com/goto/ir4ps3>>.

Select Custom 1 device.

Alternative devices are listed in the CCF.

IR4PS3 Setup:

Next instructions are based on PLAYSTATION®3 System Software 2.20

1. Prepare your Infra-Red Universal Remote Control.
2. Use your Sixaxis game controller for steps 3 and 4.
3. Select  (Accessory Settings) under  (Settings) in the home menu.
4. Select [Register BD Remote Control].
5. Ignore PLAYSTATION®3 instructions at this point (simultaneous START+ENTER is not possible on an Infra-Red remote).
6. Press 'Setup' key available under 'IR4PS3' device on your Infra-Red Universal remote. 'Setup' is the preferred method to register 'IR4PS3' with PS3. An alternate method is described in **Advance IR4PS3 Setup** if database in use is missing the 'Setup' code. By default the registration time takes 3 seconds. That is normally sufficient for the PS3 to register IR4PS3. Holding down the key beyond the 3 seconds will simply extend the registration sequence until user release the key.
7. Within few seconds the PLAYSTATION®3 will accept the IR4PS3 device. If IR4PS3 remains unregistered within 15 seconds, please repeat step 6 but this time press and hold 'Setup' key until registration completes.
8. If required pass to **Advance IR4PS3 Setup** or in most cases terminate setup by pressing 'Circle' button on your Infra-Red Universal Remote Control.

Hints

- You can register only one IR4PS3 at a time. If you register another IR4PS3, you will overwrite information on the currently registered device.
- After you reach the maximum of seven active wireless controllers, you cannot register or use IR4PS3.
- Registering the IR4PS3 with another PS3™ system will clear the device registration from the first PS3™ system.
- 'Setup' is normally done once.

Advance IR4PS3 Setup:

After 'Setup' code execution the **default settings** (in **bold**) are:

- **All previous settings are lost**
- **Only PowerON allowed to Power ON**; using discrete PowerON prevents accidental power on.
- **All code sets allowed**; this is to maximize compatibility.
- **PowerOFF method A**; this method is good for any PS3 operation mode.

Advance IR4PS3 setup is required if user needs to:

- Select a specific code set and ignore the others to correct possible IR conflict between IR4PS3 and another similar device.
- Select between power off methods.
- Fine tune power off steps in case PS3 Software evolves.
- Select between 'PowerON' only or any key can power on the PS3.

Alternate method to enter IR4PS3 setup state:

At any moment the 'Setup' key should activate the setup of IR4PS3. If for some reasons this is not working, it is possible to enter in the setup state by doing the following steps:

1. Power off IR4PS3 by unplugging the external power supply.
2. Power on IR4PS3.
3. IR4PS3 is now in setup state; see Available keys on the 'Universal IR Remote' to do the advance setup and Available key press sequences.
4. 'Circle' will terminate the setup state.

Available keys on the 'Universal IR Remote' to do the advance setup:

- Valid keys for the setup are 'Clear', and '0-9'. Other keys will abort setup.
- IR codes for 'Clear' and '0-9' are common to all supported code set, any code set will work to do the setup.
- A valid init sequence is composed by 'Clear' followed by two digits.
- Use 'Clear' at any time to reset a sequence.
- Pressing the second digit always commit the sequence.
- You must do at least a 0.5 second pause between each key press on the 'Universal IR Remote'.
- When a valid sequence is entered, the PS3 will emit a beep (the one of the eject when no disk is present in the drive). This beep is just a setup assistant.

Available key press sequences to configure IR4PS3:

'Circle'	Can be used to abort setup, but any keys other than 'Clear' and '0-9' will do the same.
'Clear' '0-9' 'Clear'	Abort first digit entry
'Clear' '0' '0'	Reset code set (be sure to add a code set next)
'Clear' '0' '1'	Standard DVD (26.73) (DVP-NS36)
'Clear' '0' '2'	Recordable DVD (26.250) (RDR-GX355)
'Clear' '0' '4'	Blu-Ray (26.226) (BDP-S300)
'Clear' '0' '8'	PS2 (26.218)
'Clear' '1' '0'	Custom PS3 1 (26.35) (Logitech database)
'Clear' '2' '0'	Custom PS3 2 (26.36)
'Clear' '4' '0'	Custom PS3 3 (26.37)
'Clear' '8' '0'	Custom PS3 4 (26.38)
'Clear' '9' '1'	Power OFF method C: STOP, STOP, PS, X, X
'Clear' '9' '2'	Power OFF method B: PS (short), DOWN, DOWN, PS (3 sec), X, X
'Clear' '9' '3'	Power OFF method A: PS (3 sec), DOWN, DOWN, DOWN, UP, X, X
'Clear' '9' '4'	Increase delay for stopping DVD playback by 1 Sec increment during Power off steps (used by Power OFF method C)
'Clear' '9' '5'	Add 100 mSec between steps in the 'PowerOFF' code
'Clear' '9' '6'	Only 'PowerON' code allowed to Power ON
'Clear' '9' '7'	Any key allowed to Power ON
'Clear' '9' '8'	All code sets allowed; see code sets above
'Clear' '9' '9'	Alternatively this method can be use to register 'IR4PS3' with PS3 after <u>Alternate method to enter IR4PS3 setup state.</u>
'Setup'	The preferred method to register 'IR4PS3' with PS3 and enter setup state.

Bold cases denote default settings after 'Setup' or sequence 'Clear' '9' '9'.

RED cases denote keys you may have to hold down until PS3 console accept commands. By default the registration time takes 3 seconds. That is normally sufficient for the PS3 to register IR4PS3. Holding down the key beyond the 3 seconds will simply extend the registration sequence until user release the key.

Executing 'Setup' or sequence 'Clear' '9' '9' outside of PS3 registration context has no side effect; IR4PS3 simply enters in setup state. Please wait at least 5 seconds before pushing more sequence.

IR4PS3 advance setup examples:

In the next examples, _ENTER_SETUP_ means: use ‘Setup’ or Alternate method to enter IR4PS3 setup state and wait at least 5 seconds before pushing more sequence. Recall that if ‘Setup’ or sequence 'Clear' '9' '9' are used; IR4PS3 will reset itself to the **default settings**.

Typical setup for Registration + only ‘Standard DVD + PS2’ code set:

<u>_ENTER_SETUP_</u>	Enter in IR4PS3 setup state
'Clear' '0' '1'	Standard DVD (26.73)
'Clear' '0' '8'	PS2 (26.218)
'Circle'	

Typical setup for Registration + only ‘Custom PS3 1’ code set + any key allowed to Power ON:

<u>_ENTER_SETUP_</u>	Enter in IR4PS3 setup state
'Clear' '9' '7'	Any key allowed to Power ON
'Clear' '1' '0'	Custom PS3 1 (26.35)
'Circle'	

To erase all code sets and add support for only ‘Recordable DVD’ code set:

<u>_ENTER_SETUP_</u>	Enter in IR4PS3 setup state
'Clear' '0' '0'	Reset code set (be sure to add a code set next)
'Clear' '0' '2'	Recordable DVD (26.250)
'Circle'	

Keys definition:

EJECT:

Eject the disk

AUDIO:

Change audio on BDs with multiple audio tracked recorded

ANGLE:

Change viewing angles on BDs with multiple angles recorded on the same scene.

SUBTITLE:

Change the language for subtitles on BDs with subtitles recorded.

CLEAR:

Clear entered numbers.

TIME:

View the elapsed time or remaining time of a title or chapter.

0-9:

Enter numbers.

RED, GREEN, BLUE, YELLOW:

Perform functions assigned to each button (vary depending on the content being played).

DISPLAY:

View status information or other information on the content being played.

TOP_MENU:

View the contents top menu

POP_UP_MENU:

View the content's pop-up menu

RETURN:

Return to a specific point in the video.

△/OPTIONS, □/VIEW, X/CROSS, O/BACK:

Perform the same operations as the SIXAXIS wireless controller for the PS3.

UP_ARROW, LEFT_ARROW, RIGHT_ARROW, DOWN_ARROW:

Navigation keys.

PS:

Power on, contextual menu, power off, power toggle.

L1, R1, L2, R2, L3, R3:

Perform the same operations as the SIXAXIS wireless controller for the PS3.

SELECT, START:

Perform the same operations as the SIXAXIS wireless controller for the PS3.

ENTER:

Same as X/CROSS

PLAY:

Start playback

STOP:

Stop playback

PAUSE:

Stop playback temporarily

SCAN_LEFT, SCAN_RIGHT:

Fast forward or fast reverse playback. Playback speed changes each time you press the button.

NEXT_LEFT, NEXT_RIGHT:

Move to the previous or next chapter

SLOW_LEFT, SLOW_RIGHT:

Play content one frame at a time. If you press and hold down the button, content plays in slow motion.

OFF :

Power off

SETUP:

Initiate setup

Hints:

- IR4PS3 tracks PowerON and PowerOFF; if for some reason IR4PS3 looks out of sync in respect to the PS3 state please sends the PowerON code to resynchronize both.
- IR4PS3 is in PowerOFF state after a power failure.
- Consider **Advance IR4PS3 Setup** only if you suspect IR conflict between IR4PS3 and other Sony DVD/BD products.
- After executing 'Setup' or sequence 'Clear' '9' '9' don't forget to stop transmitting IR for at least 5 seconds.
- Customize your Universal IR remote key layout so that the 'Setup' key is not easy to access. Recall that it should be done once. You don't want to loose your setup because someone hit the 'Setup' key accidentally.
- Assign the 'X' to the 'Ok' of your Universal IR remote. 'X' is the main acknowledge for the PS3.
- PowerOFF method A do strange moves in some situation; this is normal. The macro in place to emulates all the steps (**PS (3 sec), DOWN, DOWN, DOWN, UP, X, X**) is done this way to properly shutdown in all operational modes (this include PS3 firmware 2.4).
- PowerOFF method B do strange moves in some situation; this is normal. The macro in place to emulates all the steps (**PS (short), DOWN, DOWN, PS (3 sec), X, X**).
- PowerOFF method B can't power off in game mode since PS3 firmware 2.4.
- PowerOFF method C can't power off in game mode in any PS3 firmware version.
- PowerOFF method C needs large delays to properly shutdown when playing back a DVD/BD. This is because PS3 ignore BlueTooth codes during the stop process. Delays can be fine tuned.
- Be sure to use PowerON and PowerOFF to control the ON/OFF of the PS3. Database for some Sony DVD devices use PowerToggle by default.
- Be sure no implicit 'Stop' is sent prior to send the 'PowerOFF' code (see **Preparation before doing the 'IR4PS3' setup**).
- If you are using a rated 3V DC power supply and IR4PS3 is not behaving properly (erratic command execution) please use a higher voltage power supply 4.5V to 9V DC. Please do not exceed 9V to keep a good safety margin. At optimum supply the power level will show 3 full bar on screen.

Full code definition for techies:

Please consult < http://www.hifi-remote.com/sony/sony_home.htm> for Sony code theory.

Logitech database codes						
IR4PS3 key	PS2/PS3	DVP-NS36	RDR-GX355	Blu-Ray	Custom	Description
PS3_1	26.73.0	26.73.0	26.250.0	26.226.0	26.35.0	1
PS3_2	26.73.1	26.73.1	26.250.1	26.226.1	26.35.1	2
PS3_3	26.73.2	26.73.2	26.250.2	26.226.2	26.35.2	3
PS3_4	26.73.3	26.73.3	26.250.3	26.226.3	26.35.3	4
PS3_5	26.73.4	26.73.4	26.250.4	26.226.4	26.35.4	5
PS3_6	26.73.5	26.73.5	26.250.5	26.226.5	26.35.5	6
PS3_7	26.73.6	26.73.6	26.250.6	26.226.6	26.35.6	7
PS3_8	26.73.7	26.73.7	26.250.7	26.226.7	26.35.7	8
PS3_9	26.73.8	26.73.8	26.250.8	26.226.8	26.35.8	9
PS3_0	26.73.9	26.73.9	26.250.9	26.226.9	26.35.9	0
PS3_ENTER	26.73.11	26.73.11	26.250.11		26.35.11	Enter (menu select key also)
				26.226.112		Select for standard DVD player
						Play mode for Blu-Ray
PS3_RETURN	26.73.14	26.73.14	26.250.14		26.35.14	Return
				26.226.67		
PS3_CLEAR	26.73.15	26.73.15	26.250.15	26.226.15	26.35.15	Clear, --, +10
PS3_SELECT	26.218.80	26.218.80	26.218.80			Select
				26.226.61		
					26.35.102	
		26.73.18	26.250.18			Input Select
PS3_PS	26.73.21	26.73.21	26.250.21	26.226.21	26.35.21	Power toggle
	26.218.21					
	26.73.46	26.73.46	26.250.46	26.226.46	26.35.46	Power On (discrete)
	26.218.46					
PS3_EJECT	26.218.22	26.73.22	26.250.22	26.226.22	26.35.22	Open/Close/Eject
	26.73.22					
PS3_TOP_MENU	26.73.26	26.73.26	26.250.26		26.35.26	Title, Top Menu
				26.226.42		
PS3_POP_UP_MENU	26.73.27	26.73.27	26.250.27		26.35.27	DVD Menu
				26.226.41		
PS3_TIME	26.73.40	26.73.40	26.250.40		26.35.40	Time/Text
				26.226.113		Dimmer for Blu-Ray
PS3_NEXT_LEFT	26.73.48	26.73.48	26.250.48		26.35.48	Previous
				26.226.86		
PS3_NEXT_RIGHT	26.73.49	26.73.49	26.250.49		26.35.49	Next
				26.226.87		
PS3_PLAY	26.73.50	26.73.50	26.250.50		26.35.50	Play
				26.226.26		
PS3_SCAN_LEFT	26.73.51	26.73.51	26.250.51		26.35.51	Scan Reverse
				26.226.27		
PS3_SCAN_RIGHT	26.73.52	26.73.52	26.250.52		26.35.52	Scan Forward
				26.226.28		
PS3_STOP	26.73.56	26.73.56	26.250.56		26.35.56	Stop
				26.226.24		

PS3_PAUSE	26.73.57	26.73.57	26.250.57	26.226.25	26.35.57	Pause
PS3_RED	26.73.64	26.73.64	26.11.103 26.250.64	26.226.103	26.35.64	RED Disc 1
PS3_GREEN	26.73.65	26.73.65	26.11.104 26.250.65	26.226.104	26.35.65	GREEN Disc 2
PS3_BLUE	26.73.66	26.73.66	26.11.102 26.250.66	26.226.102	26.35.66	BLUE Disc 3
PS3_YELLOW	26.73.67	26.73.67	26.11.105 26.250.67	26.226.105	26.35.67	YELLOW Disc 4
PS3_DISPLAY	26.73.84	26.73.84	26.250.84	26.226.65	26.35.84	Display, Info
PS3_SLOW_LEFT	26.73.96	26.73.96	26.250.96	26.226.83	26.35.96	Slow Reverse
PS3_SLOW_RIGHT	26.73.97	26.73.97	26.250.97	26.226.84	26.35.97	Slow Forward
PS3_SUBTITLE	26.73.99	26.73.99	26.250.99	26.226.99	26.35.99	Subtitle
PS3_AUDIO	26.73.100	26.73.100	26.250.100	26.226.100	26.35.100	Audio
PS3_ANGLE	26.73.101	26.73.101	26.250.101	26.226.101	26.35.101	Angle
PS3_L3	26.218.81	26.218.81	26.218.81	26.218.81	26.35.103	L3
PS3_R3	26.218.82	26.218.82	26.218.82	26.218.82	26.35.104	R3
PS3_START	26.218.83	26.218.83	26.218.83	26.218.83	26.35.105	Start
PS3_UP_ARROW	26.73.121	26.73.121	26.250.121	26.226.57	26.35.121	Up
PS3_RIGHT_ARROW	26.73.124	26.73.124	26.250.124	26.226.60	26.35.124	Right
PS3_DOWN_ARROW	26.73.122	26.73.122	26.250.122	26.226.58	26.35.122	Down
PS3_LEFT_ARROW	26.73.123	26.73.123	26.250.123	26.226.59	26.35.123	Left
PS3_L2	26.218.88	26.218.88	26.218.88	26.218.88	26.35.109	L2
PS3_R2	26.218.89	26.218.89	26.218.89	26.218.89	26.35.110	R2
PS3_L1	26.218.90	26.218.90	26.218.90	26.218.90	26.35.111	L1
PS3_R1	26.218.91	26.218.91	26.218.91	26.218.91	26.35.112	R1
PS3_OPTIONS	26.218.92	26.218.92	26.218.92	26.218.92	26.35.113	(triangle)
PS3_BACK	26.218.93	26.218.93	26.218.93	26.218.93	26.35.114	(circle)
PS3_CROSS	26.218.94	26.218.94	26.218.94	26.218.94	26.35.115	(X)
PS3_VIEW	26.218.95	26.218.95	26.218.95	26.218.95	26.35.116	(square)
					26.35.117	

PS3_OFF	26.73.47	26.73.47	26.250.47	26.226.47	26.35.47	Power Off (discrete)
	26.218.47	26.218.47				
PS3_SETUP	26.73.83	26.73.83	26.250.83		26.35.83	Menu, Setup, System Menu
				26.226.66		
In RED,	Documented codes but unavailable in the Logitech database, however they can be learned by the IR remote if required.					
In VIOLET,	PS2 specific code that can be used to complement the table					
In CHESTNUT,	Code that can be learned from one code set and transpose in another code set					
Custom	IR4PS3 device in Logitech database is 26.35					
	26.36, 26.37, 26.38 are also recognized by IR4PS3					
PS3_OFF	Is not a 'Sony BD Remote for PS3' standard button					
PS3_SETUP	Is not a 'Sony BD Remote for PS3' standard button					

From 'makehex' distribution:

Sony20.irp

Device=26.35

Function=0..127

Protocol=Sony20

Frequency=40000

Time Base=600

One=2,-1

Zero=1,-1

Prefix=4,-1

Message Time=45m

Form=;* ,f:7,d:5,s:8